

### **REMARKS/ARGUMENTS**

Claims 1-25 stand rejected in the outstanding Official Action. Claims 2 and 11 have been cancelled without prejudice and claims 1, 4, 5, 8-10, 13 and 16 amended. Accordingly, claims 1, 3-10 and 12-25 remain in this application.

The Examiner's acknowledgment of Applicants' claim for foreign priority is very much appreciated.

#### **Interview Summary**

The Examiner's Interview Summary sheet mailed April 12, 2007 accurately portrays the subject matter of the interview conducted April 3, 2007 in which the Examiner confirmed that the Official Action mailed March 21, 2007 was not intended to be a Final Rejection and therefore should be treated as a non-Final Rejection. The Examiner's clarification during the telephone interview was appreciated.

#### **Response to Official Action**

Claims 1-5, 7-14 and 16-19 stand rejected under 35 USC §102 as being anticipated by Almi (U.S. Publication 2002/0020806). However, the Examiner's suggestion that this is "applicant's submitted prior art" is respectfully traversed, as the Applicants in the present are inventors Miller and Jennings which is not the inventor in the Almi reference.

The Court of Appeals for the Federal Circuit has noted in the case of *Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick*, 221 USPQ 481, 485 (Fed. Cir. 1984) that "[a]nticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim." Thus, in order to anticipate Applicants'

independent claims 1, 10, 18 and 19, each recited element and each recited interrelationship between elements must be disclosed.

Independent claim 1, for example, recites numerous elements and interrelationships which are simply missing from the Almi reference. The Examiner alleges on page 3 of the Official Action that “Almi discloses an optical device comprising : a plurality of optical fiber arrays . . . .” However, this is not the structure recited in Applicants’ independent claim 1. The claimed structure recites “a plurality of optical fibre arrays” and further specifies that each optical fiber array has a cluster of optical fibers with an array output.

As disclosed in Applicants’ specification, the fibers are shown in the admitted prior art of Figure 1, i.e., optical fibers 40 which are clustered in cluster 41, 42 and 43. These clusters, however, in Figure 1 are not interconnected. Each cluster provides an output to a respective detector. Therefore, the prior art provides no plurality of optical fiber arrays where the arrays 1 through N have outputs which are interconnected through “at least one optical delay.”

Applicants’ admitted prior art may be more pertinent than the Almi reference which does not teach a plurality of optical fiber arrays in which each array has “a cluster of optical fibres.” The Examiner is queried as to where Almi shows the cluster of optical fibers which are “arranged to sequentially transmit the electromagnetic radiation to an array output?” This is simply missing from the Almi reference.

The claimed improvement over Applicants’ admitted prior art is clearly illustrated in Figures 2-9 in which the individual arrays (in a plurality of arrays) are not connected to separate signal detectors, but instead are connected to a single signal detector with the array outputs passing through optical delays to a subsequent array output.

Applicants' independent claim 1 has been amended to confirm that the cluster of optical fibers are arranged to "sequentially" transmit electromagnetic radiation to an array output. Applicants' independent claim also specifies a first "means for connecting" each array output to a subsequent array output through at least one optical delay. This is precisely the interconnection which is missing from Applicants' disclosed prior art in Figure 1, i.e., each array output is connected to its own signal detector. The benefits of having all arrays connected to the same signal detector are clearly denoted in Applicants' specification, i.e., differences in sensitivity of various detectors is overcome.

It is also noted that, in the plurality of optical fiber arrays, not only are the clusters arranged to sequentially transmit electromagnetic radiation to its respective array output, but then in the first "means for optically connecting" each of the array outputs serves to provide the output through at least one optical delay before connecting it to a subsequent array output. Even if the Examiner were to argue that Almi's Figure 2 discloses 1 through N arrays and if one arbitrarily considered the top two fibers to be a cluster within one array, the next two fibers to be a cluster within another array, etc., all of these arrays provide an output **directly to detector 6**.

Moreover, there is no disclosure of the outputs of two or more fibers being combined into an **array output** and then the array output provided to detector 6 through "at least one optical delay." Thus, Almi is not believed to teach the subject matter of independent claim 1 or the other independent claims in Applicants' specification.

Applicants note that claim 1 includes two means-plus-function recitations and in accordance with 35 USC §112 (6<sup>th</sup> paragraph), these must be construed by the Examiner to cover the corresponding structure disclosed in the specification and equivalents of such structure. In

Applicants' specification, the means for optically connecting is discussed and illustrated as being optical delay lines (for example, 50 and 51 in Figure 2) interconnecting the outputs of subsequent arrays ultimately with the output of the last array and then supplied to a single detector.

Applicants' specification illustrates a number of embodiments of such "means for optically connecting" in Figures 2-9 and thus the subject matter recited in claim 1 must be construed to cover these corresponding structures and equivalents thereto. Note that with respect to each one of the structures, it is an array output which is connected, not individual fibers, because, as defined, each array includes "a cluster of optical fibres." This "means for optically connecting" is clearly missing in Applicants' prior art disclosed in Figure 1 and is also just as clearly missing in the Almi reference. Almi in Figure 2 and elsewhere discloses connecting individual fibers not to an array output with a plurality of array outputs, but connecting those fibers directly to the detector 6 (see Almi Figure 2). Thus, Almi does not disclose Applicants' first claimed "means for optically connecting."

Applicants' second recited "means for optically connecting the N<sup>th</sup> array output to said signal detector input" is also in means-plus-function form and therefore must be construed to cover the corresponding subject matter disclosed in Applicants' specification and equivalent structures. In Figure 2, for example, the second means for optically connecting is the joint output 52 which is connected to the input 53 of the signal detector 54. However, as disclosed in Figures 4-9 and the subsequent specification discussion, the second means for optically connecting could also include a further optical delay. There is simply no such disclosure in Almi of any structure similar to that described in Applicants' specification for connecting the N<sup>th</sup> array output to said signal detector input.

Accordingly, the Almi reference fails to disclose Applicants' "plurality of optical fibre arrays" wherein each fiber has a cluster of optical fibers and is arranged to sequentially transmit radiation to an individual array output. Almi also fails to disclose any means for connecting individual array outputs to subsequent array outputs "through at least one optical delay." Finally, Almi fails to disclose any means for connecting the N<sup>th</sup> array output (since it doesn't have array outputs) to said signal detector input. As a result, Almi clearly fails to disclose Applicants' independent claim 1.

It is also noted that the limitations of claim 10, i.e., the plurality of optical fibers having an array output and the two means for optically connecting, are similarly missing from Almi. One or more of these limitations is also present in Applicants' independent claims 18-20, 22, 23 and 25 and is similarly missing from Almi. Accordingly, none of Applicants' independent claims 1, 10, 18-20, 22, 23 and 25 can be considered anticipated by the Almi reference and any further rejection thereunder is respectfully traversed.

Claims 6, 15, 20 and 25 stand rejected under 35 USC §103 as being unpatentable over Almi. Inasmuch as claims 6, 15, 20 and 25 either depend from independent claim 1, independent claim 10, or is independent claims 20 and 25, the above comments distinguishing the claimed invention from the Almi reference are herein incorporated by reference. As noted above, Almi not only fails to disclose connecting a cluster of fibers together so as to sequentially transmit electromagnetic radiation to an array output and then provide a plurality of such array outputs, Almi also fails to disclose any structure for optically connecting array outputs (since it doesn't teach an array output) and also fails to teach the second "means for optically connecting" connecting the last array output to the signal detector input.

In fact, it is noted that Almi teaches away from the claimed invention in that he specifically teaches the interconnection of each fiber directly to the signal detector. There is no **array output** disclosed which is then connected ultimately through the last **array output** to the signal detector input as required by independent claims 1, 10, 20 and 25 and thereby required of claims 6 and 15 as well.

The Examiner suggests that Official Notice is taken that an optical switch between input and output of the optical device for the purpose of controlling the output is old and well known in the art. Applicants' claim does not claim an optical switch, but rather an electromagnetic signal processing system which is a new combination of old elements. Therefore, whether it would be obvious to combine optical switches in the manner disclosed in the claims at issue is in fact a question.

Accordingly, pursuant to the provisions of the Manual of Patent Examining Procedure (MPEP) Section 2144.03, Applicants traverse the Examiner's assertion of "Official Notice" and requests the Examiner to cite a reference in support of her position. That as yet unknown reference should contain some teaching which would suggest that an optical switch be arranged between array group outputs and a signal detector input as set out in the claims.

Care should also be taken by the Examiner that in responding to the traversal of Official Notice, that she also provide some reason or motivation for combining the Almi and the newly cited reference because, as is well known, one may not merely pick and choose elements from the known prior art and then combine them in the manner of Applicants' claims without some reason or motivation. Absent some disclosure for combining an optical switch with the

disclosure of the Almi reference, any further rejection under 35 USC §103 is respectfully traversed.

Moreover, because, as noted above, the Almi reference teaches away from connecting optical fibers so as to “sequentially transmit the electromagnetic radiation to an array output” and suggests that each fiber output be connected directly to a signal detector, Almi clearly leads one of ordinary skill in the art away from Applicants’ claimed combination. Therefore, even if Almi were combined with some as yet unidentified reference teaching an optical switch, Almi would appear to lead one of ordinary skill in the art away from such combination.

In view of the above, there is no support identified by the Examiner for a *prima facie* case of obviousness of claims 6, 15, 20 and 25 and therefore any further rejection thereunder is respectfully traversed.

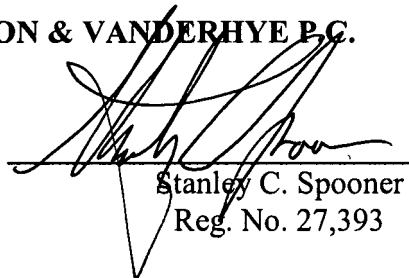
Having responded to all objections and rejections set forth in the outstanding Official Action, it is submitted that claims 1, 3-10 and 12-25 are in condition for allowance and notice to that effect is respectfully solicited. In the event the Examiner is of the opinion that a brief telephone or personal interview will facilitate allowance of one or more of the above claims, she is respectfully requested to contact Applicants’ undersigned representative.

MILLER et al  
Appl. No. 10/518,031  
September 21, 2007

Respectfully submitted,

**NIXON & VANDERHYE P.C.**

By:



Stanley C. Spooner  
Reg. No. 27,393

SCS:kmm  
901 North Glebe Road, 11th Floor  
Arlington, VA 22203-1808  
Telephone: (703) 816-4000  
Facsimile: (703) 816-4100